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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/771,144

01/26/2001

William Dean Warner

DATUMTE.006A

6196

20995

7590

12/17/2004

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EXAMINER

ODOM, CURTIS B

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/771,144

Applicant(s)

WARNER ET AL.

Examiner

Curtis B. Odom

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 and 50-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 1-23 and 50-55 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - a. On page 34, line 25, "LO output 176" is suggested to be changed to "LO output 178".
 - b. On page 35, line 14, "QMCSP 510" is suggested to be changed to "QMCSP 1510".

Appropriate correction is required.

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

3. Claims 1-23 and 50-55 are objected to because of the following informalities:
 - a. Regarding claim 1, in the preamble, the phrases "A modulator that receives..." and "the modulator comprising..." are suggested to be changed to "An apparatus that receives..." and "the apparatus comprising" for clarification purposes. The claim currently recites a modulator comprising of a modulator system and a demodulator system. However, it is

the understanding of the examiner that in fact the modulator system includes the modulator.

Thus, there is a need for clarification in the claim.

b. Regarding claims 2-23, the phrase “The modulator as defined...” is suggested to be changed to “The apparatus as defined...”.

c. Regarding claims 50-55, in claim 50, the phrase “A method of quadrature modulating baseband signals...” is suggested to be changed to “A method of quadrature modulating and demodulating baseband signals...”.

d. Regarding claim 52, the phrase “applied to analog quadrature demodulator” is suggested to be changed to “applied to the analog quadrature demodulator”.

Appropriate correction is required.

Allowable Subject Matter

4. Claims 1-23 are allowable over prior art references (if above objections are overcome) because related references do not disclose a quadrature modulating and demodulating a baseband signal including negating a quadrature impairment in the modulator and demodulator using compensation signal processors which include filters and an adaptive control processing and compensation estimation circuit which monitors the baseband signal and updates parameters used by the signal processors to negate the quadrature impairment. Claims 50-55 are allowable over prior art references (if above objections are overcome) because related references do not disclose a method of quadrature modulating/demodulating signals including compensating for a

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quadrature impairment by applying a first and second impulse response to signals and characterizing the quadrature impairment by computing transfer functions.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Adachi et al. (U. S. Patent No. 5, 802, 451) discloses compensating a quadrature impairment in a modulation/demodulation system.

Whitmarsh et al. (U. S. Patent No. 5, 381, 108) discloses calibrating a quadrature balance within a quadrature modulation/demodulation system.

6. This application is in condition for allowance except for the following formal matters:
See objections above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.


A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 571-272-3046. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Curtis Odom
December 6, 2004



STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800